

Estimating Severity for Development of the Contaminant Candidate List (CCL)

Amal M. Mahfouz

Senior Toxicologist

Office of Water, Office of Science and Technology, Health and Ecological Criteria Division

(202) 566-1114

mahfouz.amal@epa.gov

Authors: A. Mahfouz, J.M. Donohue, N. Chiu, J. Du, O. Conerly, C.O. Abernathy, A. Bathija, S. Kueberuwa

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Under the 1996 Amendment to the SDWA, the Office of Water (OW) was charged with developing a focused process to select contaminants in drinking water for possible future regulation. In March 1998, EPA published the first Contaminant Candidates List (CCL) and asked the National Academy of Sciences (NAS) to peer review the process used in developing this list. Based on the NAS' recommendations, EPA is testing a new approach to develop future CCLs, with the objective of making wise decisions that will be protective of public health.

Five attributes (potency, severity, prevalence, magnitude, persistence/mobility) were recommended by the NAS to select the CCL from a group of initially screened contaminants referred to as the Pre-CCL. To test the implementation of the NAS' scoring protocol for one of these attributes, namely the severity of the toxic effect of these contaminants, OW tested the NAS' severity protocol against data on chemicals with potential to be on the Pre-CCL and then refined the severity scale based on the test results.

The metric selected to provide the severity data was the critical effect associated with the parameter chosen to score potency (i.e., RfD, LOAEL, etc). For one phase of testing the severity scoring protocol, the first 100 chemicals on IRIS were used as a data source for critical effects. The critical effects were scored against a nine-point severity scale and binned by score. This permitted a detailed evaluation of the scoring scale. For some chemicals, the critical effect given in the IRIS database was found to be ambiguous, others had several critical effects listed and others had none. This required further refinement of the severity scoring protocol. Some issues are still under consideration in scoring severity; these include concerns about sensitive population, concerns about chemicals with extensive data gaps, and testing the severity scores in conjunction with the other attribute scores in several CCL prototype decision algorithms.